

DIRECTOR'S OFFICE ~~BUREAU OF SAFETY AND REGULATION~~

GENERAL INDUSTRY SAFETY STANDARDS COMMISSION

Filed with the Secretary of State on April 22, 2015

These rules become effective immediately upon filing with the Secretary of State unless adopted under section 33, 44, or 45a(6) of 1969 PA 306.

Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the director of the department of **licensing and regulatory affairs** ~~consumer and industry services~~ by sections 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order **Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030** ~~No. 1996-2, MCL 445.2004~~

R 408.10601, R 408.10603, R 408.10604, R 408.10605, R 408.10606, R 408.10611, R 408.10612, R 408.10613, R 408.10621, R 408.10623, R 408.10624, R 408.10631, R 408.10632, R 408.10633, R 408.10634, R 408.10636, R 408.10639, R 408.10641, R 408.10643, R 408.10644, R 408.10645, R 408.10647, R 408.10661, R 408.10664, R 408.10671, R 408.10673, R 408.10675, R 408.10677, R 408.10685, R 408.10686, R 408.10695, and R 408.10696, are amendeded, and R 408.10627 and R 408.10680 are added and R 408.10637 and R 408.10638, are rescinded, to the Michigan Administrative Code as follows:

PART 6. FIRE EXITS

GENERAL PROVISIONS

R 408.10601 Scope.

Rule 601. **(1) These rules specify** ~~This part specifies~~ requirements for means of egress for employee use required by the advent of hazardous conditions such as fire, explosion, and natural disaster.

(2) These rules apply to workplaces in general industry except mobile workplaces such as vehicles or vessels.

(3) These rules cover the minimum requirements for exit routes that employers must provide in their workplace so that employees may evacuate the workplace safely during an emergency. These rules cover the minimum requirements for emergency action plans and fire prevention plans.

R 408.10603 Definitions; B to F.

Rule 603. (1) "Breakaway door" means a door **that** is designed to slide in normal operation and which will swing open in any position when a maximum pressure of 50 pounds is applied to the latch side of the door in an emergency.

(2) "Draw bolt" means a metal bar or rod in the mechanism of a lock that is thrown or withdrawn by turning the key or retracting a lever.

(3) **"Electroluminescent" means a light-emitting capacitor. Alternating current excites phosphor atoms when placed between the electrically conductive surfaces to produce light. This light source is typically contained inside the device.** ~~"Fire area of a building" means that space contained within component structural parts which has a fire resistance sufficient to prevent the further spread of fire which originates therein.~~

(4) **"Fire area of a building" means that space contained within component structural parts that has a fire resistance sufficient to prevent the further spread of fire that originates therein.** ~~"Fire door" means a fire-resistive door assembly, including the frame and hardware.~~

(5) **"Fire door" means a fire-resistive door assembly, including the frame and hardware.** ~~"Fire resistance" means the property of a material or assembly to withstand fire or give protection from it.~~

(6) **"Fire resistance" means the property of a material or assembly to withstand fire or give protection from it.** ~~"Flammable" means subject to easy ignition and rapid flaming combustion.~~

(7) **"Flammable" means subject to easy ignition and rapid flaming combustion.** ~~"Floor area" or "gross area" means the floor area within the perimeter of the outside walls of a building, with no deductions for any of the following:~~

~~(a) Hallways.~~

~~(b) Stairs.~~

~~(c) Closets.~~

~~(d) Thickness of walls.~~

~~(e) Columns.~~

~~(f) Other features.~~

(8) **"Floor area" or "gross area" means the floor area within the perimeter of the outside walls of a building, with no deductions for any of the following:** ~~"Flush bolt" means a door bolt which is designed so that when applied it is flush with the face or edge of the door.~~

(a) **Hallways.**

(b) **Stairs.**

(c) **Closets.**

(d) **Thickness of walls.**

(e) **Columns.**

(f) **Other features.**

(9) **"Flush bolt" means a door bolt that is designed so that when applied it is flush with the face or edge of the door.**

R 408.10604 Definitions; H to M.

Rule 604. (1) **"Hasp and staple" means a fastening device that consists of a slotted hinge plate and a loop (staple).**

(2) **"Hazardous area" means an area of a building, or portion thereof, used for purposes that involve highly combustible, highly flammable, or explosive products or materials which are likely to burn with extreme rapidity or which may produce poisonous fumes or gases, including highly toxic or noxious acids, alkalines, or irritant hazards; which cause the division of material into fine particles or dust subject to explosion or spontaneous combustion; or which constitute a high fire hazard because of the form, character, or volume of the material used.**

(3) **"Hazard of contents" means the relative danger of the start and spread of fire, the danger of smoke or gases generated, and the danger of explosion or other occurrence potentially endangering the lives and safety of employees in a building. Where certain features of a building are such as to involve a hazard greater than the hazard of the contents, the greater degree of hazard shall govern.**

(4) **"High hazard area" means an area inside a workplace in which operations include high hazard materials, processes, or contents.** ~~"High hazard contents" means combustibles of a character or quantity which burn with extreme rapidity or from which extremely poisonous fumes or explosions are to be expected in the case of fire.~~

(5) **"High hazard contents" means combustibles of a character or quantity that burn with extreme rapidity or from which extremely poisonous fumes or explosions are to be expected in the case of fire.** ~~"Horizontal exit" means a way of passage from a building to an area of refuge in another building on approximately the same level or a way of passage through or around a fire-resistant wall or fire-resistant partition to an area of refuge on approximately the same level in the same building which affords safety from fire or smoke in the area of escape and areas communicating therewith.~~

(6) **"Horizontal exit" means a way of passage from a building to an area of refuge in another building on approximately the same level or a way of passage through or around a fire-resistant wall or fire-resistant partition to an area of refuge on approximately the same level in the same building which affords safety from fire or smoke in the area of escape and areas communicating therewith.** ~~"Low hazard contents" means combustibles of such low combustibility that self-propagating fire cannot occur and that consequently the only probable danger will be from panic, fumes, smoke, or fire from some external source.~~

(7) **"Listed" means equipment that is listed if it is of a kind mentioned in a list that is published by a nationally recognized testing laboratory that makes periodic inspections of the production of such equipment and that states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.** ~~"Means of egress" means a continuous path of travel from any point in a building to the open air outside at ground level and consists of 3 separate and distinct parts: the exit access, the exit, and the exit discharge. A means of egress comprises both vertical and horizontal means of travel. The 3 separate parts are defined as follows:~~

~~(a) "Exit access" means that portion of a means of egress which leads to an entrance to an exit.~~

~~(b) "Exit" means that portion of a means of egress which is separated from the area of a building from which escape is to be made by a wall, floor, door, or other means which provides the protected path necessary to proceed with reasonable safety to the exterior of the building.~~

~~(c) "Exit discharge" means that portion of a means of egress between termination of the exit and the exterior of the building at ground level.~~

(8) **"Low hazard contents" means combustibles of such low combustibility that self-propagating fire cannot occur and that consequently the only probable danger will be from panic, fumes, smoke, or fire from some external source.**

(9) **"Means of egress" also known as an "exit route" means a continuous and unobstructed path of exit travel from any point within a workplace to a place of safety, including refuge areas. A means of egress includes both vertical and horizontal areas along the route of travel. A means of egress or an exit route consists of 3 separate parts and are defined as follows:**

(a) **"Exit access" means that portion of a means of egress or an exit route which leads to an exit. An example of an exit access is a corridor on the 5th floor of an office building that leads to a 2-hour fire resistance-rated enclosed stairway.**

(b) "Exit" means that portion of a means of egress or an exit route that is separated from the area of a building from which escape is to be made by a wall, floor, door, or other means which provides the protected path necessary to proceed with reasonable safety to the exterior of the building. An example of an exit is a 2-hour fire resistance-rated enclosed stairway that leads from the 5th floor of an office building to the outside of the building.

(c) "Exit discharge" means that portion of an exit route that leads directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside. An example of an exit discharge is a door at the bottom of a 2-hour fire resistance-rated enclosed stairway that discharges to a place of safety outside the building.

R 408.10605 Definitions; N to S.

Rule 605. (1) "**Nationally recognized testing laboratory.**" See 29 C.F.R. §1910.7 "Definition and requirements for a nationally recognized testing laboratory," as adopted in R 408.10606, for the definition. ~~"Noncombustible building" means a building that is constructed of materials which do not support fire.~~

(2) "**Noncombustible building**" means a building that is constructed of materials that do not support fire. ~~"Ordinary hazard contents" means combustibles which are liable to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither extremely poisonous fumes nor explosions are to be expected in case of fire.~~

(3) "**Occupant load**" means the total number of persons that may occupy a workplace or portion of a workplace at any one time. The occupant load of a workplace is calculated by dividing the gross floor area of the workplace or portion of the workplace by the occupant load factor for that particular type of workplace occupancy. Information regarding the "Occupant load" is located in NFPA 101 "Life Safety Code," 2009 edition and in the "International Fire Code" 2009 edition, as adopted in R 408.10606. ~~Self-closing" means equipped with an approved device which will insure closing without manual assistance after having been opened.~~

(4) "**Ordinary hazard contents**" means combustibles that are liable to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither extremely poisonous fumes nor explosions are to be expected in case of fire. ~~Sprinklered" means equipped with an approved automatic sprinkler system which is properly maintained.~~

(5) "**Refuge area**" means either of the following: "Street" means a public thoroughfare which is 30 or more feet in width, which has been dedicated or deeded to the public for public use, and which is accessible for use by a fire department in fighting fires. An enclosed space or tunnel, even though used for vehicular and pedestrian traffic, is not considered a street.

(a) A space along an exit route that is protected from the effects of fire by separation from other spaces within the building by a barrier with at least a 1-hour fire resistance-rating.

(b) A floor with at least 2 spaces, separated from each other by smoke-resistant partitions, in a building protected throughout by an automatic sprinkler system that complies with General Industry Safety Standard Part 9 "Fixed Fire Equipment," as referenced in R 408.10606.

(6) "**Self-closing**" means equipped with an approved device which will ensure closing without manual assistance after having been opened. ~~"Surface bolt" means a locking bolt that is installed on the surface of a door~~

(7) "**Sprinklered**" means equipped with an approved automatic sprinkler system that is properly maintained.

(8) "**Street**" means a public thoroughfare that is 30 or more feet in width, treat has been dedicated or deeded to the public for public use, and treat is accessible for use by a fire department in fighting fires. An enclosed space or tunnel, even though used for vehicular and pedestrian traffic, is not considered a street.

(9) "**Self-luminous**" means a light source that is illuminated by a self-contained power source, like tritium, and that operates independently from external power sources. Batteries are not acceptable self-contained power sources. The light source is typically contained inside the device.

(10) "**Surface bolt**" means a locking bolt that is installed on the surface of a door.

R 408.10606 Adoption of standards by reference; access to other MIOSHA rules. ~~Rescinded.~~

Rule 606. (1) The National Fire Protection Association NFPA 101 "Life Safety Code," 2009 edition, is adopted by reference in these rules and is available from IHS Global, 15 Inverness Way East, Englewood, Colorado, 80112, USA, telephone number: 1-800-854-7179 or via the internet at website: <http://global.ihs.com>; at a cost as of the time of adoption of these rules of \$93.00.

(2) The "International Fire Code" 2009 edition, is adopted by reference in these rules and is available from International Code Council, 500 New Jersey Avenue, NW, 6th floor, Washington, DC 20001, USA, telephone number: 1-800-786-4452, or via the internet at website: www.iccsafe.org; at a cost as of the time of adoption of these rules of \$113.00.

(3) The following federal occupational safety and health administration (OSHA) regulations from the code of federal regulations are adopted by reference in these rules:

(a) 29 C.F.R. §1910.7 "Definition and requirements for a nationally recognized testing laboratory."

(b) 29 C.F.R. 1910.165 "Employee alarm systems"

(4) The standards adopted in these rules are available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(5) Copies of the standards adopted in these rules may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost charged in this rule, plus \$20.00 for shipping and handling.

(6) The following Michigan occupational safety and health standards (MIOSHA) are referenced in these rules. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of Licensing and Regulatory Affairs, MIOSHA standards section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143 or via the internet at website: www.michigan.gov/mioshastandards. For quantities greater than 5, the cost, at the time of adoption of these rules, is 4 cents per page.

(a) General Industry Safety Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," R 408.10201 to R 408.10241.

(b) General Industry Safety Standard Part 3 "Fixed Ladders," R 408.10301 to R 408.10372.

(c) General Industry Safety Standard Part 9 "Fixed Fire Equipment," R 408.10901 to R 408. 10999.

R 408.10611 Design of buildings and structures.

Rule 611. (1) ~~The danger to employees must be minimized. A building or structure designed for human occupancy shall be provided with exits, as prescribed in this part, which permit prompt escape in case of fire or other emergency. Exits and other safeguards shall be designed so that an employee's safety or preservation of life in case of fire or other emergency is not dependent solely on a single safeguard. Additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to human or mechanical failure.~~

(2) ~~A building or structure designed for human occupancy shall be provided with exits, as prescribed in this part, that permit prompt escape in case of fire or other emergency. A building or structure shall be constructed, arranged, equipped, maintained, and operated to avoid undue danger to the lives and safety of the employees from fire, smoke, fumes, or panic during the period of time necessary for escape from the building or structure.~~

(3) ~~Exits and other safeguards shall be designed so that an employee's safety or preservation of life in case of fire or other emergency is not dependent solely on a single safeguard. Additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to human or mechanical failure. If a building or structure is of such size, arrangement, or occupancy that a fire might not itself provide a warning, the building or structure shall be equipped with a fire alarm system in accordance with the provisions of R 408.10981 of general industry safety standard, Part 9. Fixed Fire Equipment, to facilitate a fire drill or to warn of a fire so the employees may escape.~~

(4) ~~Exit routes shall be kept free of explosive or highly flammable furnishings or other decorations.~~

(5) ~~A building or structure shall be constructed, arranged, equipped, maintained, and operated to avoid undue danger to the lives and safety of the employees from fire, smoke, fumes, or panic during the period of time necessary for escape from the building or structure.~~

(6) ~~An employee alarm system must be operable. Employers shall install and maintain an operable employee alarm system that has a distinctive signal to warn employees of fire or other emergencies, unless employees can promptly see or smell a fire or other hazard in time to provide adequate warning to them. The employee alarm system must comply with General Industry Safety Standard Part 9 "Fixed Fire Equipment," and 29 C.F.R. 1910.165 "Employee alarm systems" as adopted in R 408.10606~~

R 408.10612 Occupancy of new buildings.

Rule 612. ~~During new construction, employees shall not occupy a workplace until the exit routes required by these rules are completed and ready for employee use for the portion of the workplace they occupy. A building under construction shall not be occupied, in whole or in part, until all facilities required by this part, in the portion to be occupied, are installed and functioning.~~

R 408.10613 Occupancy and use during repairs and alterations.

Rule 613. (1) ~~During repairs or alterations, employees shall not occupy a workplace unless the exit routes required by these rules are available and existing fire protections are maintained, or until alternate fire protection is furnished that provides an equivalent level of safety. An existing building shall not be occupied during repairs or alterations unless exits and fire protection are continuously maintained.~~

(2) ~~Employees shall not be exposed to hazards of flammable or explosive substances or equipment used during construction, repairs, or alterations, that are beyond the normal permissible conditions in the workplace, or that would impede exiting the workplace. A hazardous substance or equipment for repairs or alterations shall not be introduced in a building while the building is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger to employees' lives.~~

CLASSES OF OCCUPANCY AND HAZARD OF CONTENTS

R 408.10621 Classes of occupancy.

Rule 621. A building or part thereof shall be classified as follows:

(a) A hotel, which includes a building, portion of a building, or group of buildings which is under the same management and in which there are more than ~~16~~ 45 sleeping accommodations for hire that are primarily used by transients, whether designated as a hotel, apartment hotel, inn, club, or motel or by any other name.

(b) Mercantile occupancy, which includes a store, market, and other room or building for the display and sale of merchandise. Examples of this occupancy are as follows:

- (i) Supermarkets.
- (ii) Department stores.
- (iii) Shopping centers.
- (iv) Drugstores.
- (v) Auction rooms.

(c) Business occupancy, which means a place used for the transaction of business, other than that covered under mercantile occupancy, for the keeping of accounts and records and for similar purposes. Examples of this occupancy are as follows:

- (i) Doctors' and dentists' offices.
- (ii) City and township halls.
- (iii) Courthouses.
- (iv) Libraries.
- (v) Schools.

(d) An industrial occupancy, which includes a factory that makes products of all kinds and a property devoted to operations such as processing, assembling, mixing, packaging, finishing or decorating, repairing, and similar operations.

Examples of this group are as follows:

- (i) Laboratories.
- (ii) Dry cleaning plants.
- (iii) Power plants.
- (iv) Pumping stations.
- (v) Smokehouses.
- (vi) Laundries.
- (vii) Creameries.
- (viii) Gas plants.
- (ix) Refineries.
- (x) Sawmills.

(e) A storage occupancy, which includes a building that is used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Examples of this group are as follows:

- (i) Warehouses.
- (ii) Cold storage operations.
- (iii) Freight terminals.
- (iv) Truck and marine terminals.
- (v) Bulk oil storage.
- (vi) Parking garages.
- (vii) Hangars.
- (viii) Grain elevators.
- (ix) Barns.
- (x) Stables.

(f) Miscellaneous occupancies, which means those buildings covered in the provisions of R 408.10691 to R 408.10697.

R 408.10623 Employee emergency **action** plans.

Rule 623. (1) ~~This rule applies to all~~ **An employer shall have an** emergency action **plan** ~~plans whenever they~~ that are required by a particular Michigan occupational safety and health act ~~safety standard~~. **The requirements in these rules apply to each such emergency action plan.** ~~The emergency action plan shall be in writing and shall specify the designated actions that employers and employees must take to ensure employee safety from fire and other emergencies. Employers that employ less than 10 employees may communicate the plan orally to employees and need not maintain a written plan.~~

(2) **An emergency action plan shall be in writing, kept in the workplace, and available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.** ~~All of the following information, at a minimum, shall be included in an emergency plan:~~

- ~~(a) Emergency escape procedures and emergency escape route assignments.~~
- ~~(b) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.~~
- ~~(c) Procedures to account for all employees after emergency evacuation has been completed.~~

~~(d) Rescue and medical duties for those employees who are trained to perform them.~~

~~(e) The preferred means of reporting fires and other emergencies.~~

~~(f) The names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.~~

~~(3) An emergency action plan shall include at a minimum all of the following: An employer shall establish an employee alarm system which is in compliance with the provisions of O.H. rule 1910.165, employee alarm systems, and which is available, upon request, from the safety standards division of the Michigan department of consumer and industry services. If the employee alarm system is used for alerting fire brigade members or for other purposes, a distinctive signal for each purpose shall be used.~~

~~(a) Procedures for reporting a fire or other emergency.~~

~~(b) Procedures for emergency evacuation, including type of evacuation and exit route assignments.~~

~~(c) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.~~

~~(d) Procedures to account for all employees after evacuation.~~

~~(e) Procedures to be followed by employees performing rescue or medical duties. and~~

~~(f) The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.~~

~~(4) An employer shall establish an employee alarm system that is in compliance with the provisions of General Industry Safety Standard Part 9 "Fixed Fire Equipment," and 29 C.F.R. 1910.165 "Employee alarm systems" as adopted in R 408.10606. If the employee alarm system is used for alerting fire brigade members or for other purposes, a distinctive signal for each purpose shall be used. An employer shall establish, in the emergency action plan, the types of evacuation to be used in emergency circumstances.~~

~~(5) An employer shall establish, in the emergency action plan, the types of evacuation to be used in emergency circumstances. Before implementing the emergency action plan, an employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees. The employer shall review the plan, at the following times, with each employee to whom the plan applies:~~

~~(a) When the plan is developed.~~

~~(b) If an employee's responsibilities or designated actions under the plan change.~~

~~(c) If the plan is changed. An employer shall review, with each employee, upon initial assignment, those parts of the plan that the employee must know to protect the employee in an emergency. The written plan shall be kept at the workplace and made available for employee review.~~

~~(6) Before implementing the emergency action plan, an employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.~~

~~(7) The employer shall review the plan, at the following times, with each employee to whom the plan applies:~~

~~(a) When the plan is developed.~~

~~(b) If an employee's responsibilities or designated actions under the plan change.~~

~~(c) If the plan is changed.~~

~~(8) An employer shall review, with each employee, upon initial assignment, those parts of the plan that the employee must know to protect the employee in an emergency.~~

R 408.10624 Fire prevention plans.

Rule 624. (1) ~~This rule applies to all~~ **An employer shall have a fire prevention plan plans whenever they that** are required by a particular Michigan occupational safety and health act standard. **The requirements in these rules apply to each such fire prevention plan.** ~~The fire prevention plan shall be in writing. Employers that employ less than 10 employees may communicate the plan orally to employees and need not maintain a written plan.~~

(2) A fire prevention plan must be in writing, be kept in the workplace, and be made available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.

~~(2) All of the following information, at a minimum, shall be included in the fire prevention plan:~~

~~(a) All of the following information about major workplace fire hazards:~~

~~(i) A list of the major workplace fire hazards.~~

~~(ii) The proper handling and storage procedures for the items listed in paragraph (i) of this subdivision.~~

~~(iii) The potential ignition sources of the items listed in paragraph~~

~~(i) of this subdivision, such as welding or smoking, and control procedures with respect to the potential sources of ignition.~~

~~(iv) The type of fire protection equipment or systems that are necessary to control a fire that involves the items specified in paragraph (i) of this subdivision.~~

~~(b) The names or regular job titles of those personnel who are responsible for the maintenance of equipment and systems that are installed to prevent or control fires or the sources of ignition.~~

~~(c) The names or regular job titles of those personnel who are responsible for the control of fuel source hazards.~~

~~(3) An employer shall control the accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The control procedures shall be included in the written fire prevention plan.~~

~~(4) An employer shall inform employees of the fire hazards of the materials and processes to which they are exposed.~~

(5) An employer shall review, with each employee, upon initial assignment, those parts of the fire prevention plan that the employee must know to protect the employee in an emergency. ~~The written plan shall be kept in the workplace and made available for employee review.~~

(6) An employer shall regularly and properly maintain, according to established procedures, equipment and systems that are installed on heat-producing equipment to prevent the accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

(7) Minimum elements of a fire prevention plan shall include all of the following information:

(a) A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.

(b) Procedures to control accumulations of flammable and combustible waste materials.

(c) Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials.

(d) The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires.

(e) The name or job title of employees responsible for the control of fuel source hazards.

R 408.10627 Compliance with alternate exit-route codes.

Rule 627. MIOSHA shall deem an employer demonstrating compliance with the exit-route provisions of the NFPA 101 "Life Safety Code," 2009 edition or the exit-route provisions of the "International Fire Code" 2009 edition, as adopted in R 408.10606, to be in compliance with the corresponding requirements in these rules.

MEANS OF EGRESS

R 408.10631 Construction, maintenance, and changes.

Rule 631. (1) The components of a means of egress including doors, stairs, ramps, passages, and signs shall be of substantial construction and shall be maintained in an operable condition.

(2) An exit shall be not less than 28 inches (71.1 cm) wide at all points, except where specifically permitted elsewhere in this part. Where there is only 1 exit access leading to an exit or exit discharge, the width of the exit and exit discharge shall be at least equal to the width of the exit access. Ceiling height of a means of egress shall be not less than 7 1/2 feet and a projection from the ceiling not less than 6 2/3 feet from the floor.

(3) The ceiling of an exit route shall be at least 7 feet 6 inches (2.3 m) high. Any projection from the ceiling shall not reach a point less than 6 feet 8 inches (2.0 m) from the floor. A space formed with movable or folding partitions and occupied by more than 20 persons shall have an approved means of egress.

(4) The width of an exit route shall be sufficient to accommodate the maximum permitted occupant load of each floor served by the exit route. An alteration, addition, or change of occupancy that would reduce means of egress below the requirements for a new building is prohibited.

(5) Objects that project into the exit route shall not reduce the width of the exit route to less than the minimum width requirements for exit routes. Furnishings and decorations of an explosive or highly flammable character shall not be used in any occupancy.

(6) Exit routes must be kept free of explosive or highly flammable furnishings or other decorations. Where fire retardant paints or solutions are used, they shall be renewed, as necessary to maintain their fire retardant properties.

(7) A space formed with movable or folding partitions and occupied by more than 20 persons shall have an approved means of egress.

(8) An alteration, addition, or change of occupancy that would reduce means of egress below the requirements for a new building is prohibited.

(9) Furnishings and decorations of an explosive or highly flammable character shall not be used in any occupancy.

(10) Where fire retardant paints or solutions are used, they shall be renewed, as necessary to maintain their fire retardant properties.

R 408.10632 Obstructions.

Rule 632. (1) An employer shall ensure that exit routes are free and unobstructed. No materials or equipment may be placed, either permanently or temporarily, within the exit route. The exit access shall not go through a room that can be locked, such as a bathroom, to reach an exit or exit discharge, nor may it lead into a dead-end corridor. Stairs or a ramp shall be provided where the exit route is not substantially level. A means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in case of fire or other emergency. A mirror shall not be placed on an exit door or be placed in or adjacent to an exit in a manner to confuse the direction of exit.

(2) A lock, fastening device, or barrier shall not be installed or used on a means of egress in a manner that will prevent or hinder free escape from the inside of a building.

(3) Exit route doors shall be free of any device or alarm that could restrict emergency use of the exit route if the device or alarm fails. ~~A device or alarm to restrict the improper use of an exit shall be so designed and installed that it cannot, even in case of failure, impede or prevent emergency use of an exit.~~

(4) Devices such as turnstiles and gates shall not be placed so as to obstruct a means of egress.

(5) No combustible or flammable debris, waste, or other material, the burning of which would render hazardous egress from the building shall be placed, stored, or kept on, under, at the bottom of, or adjacent to a means of egress or elevator. Where a means of egress is being obstructed by the placement of movable objects, aisles shall be marked and railings or permanent barriers provided to protect the means of egress against encroachment. ~~{ Railing or standard barrier as per general industry safety standards commission standards, Part 2. Floor~~ **General Industry Safety Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," as referenced in R 408.10606.** ~~Skylights, being R 408.10201 to R 408.10239 of the Michigan Administrative Code.)~~

(6) Each exit route door shall be free of decorations or signs that obscure the visibility of the exit route door. A mirror shall not be placed on an exit door or be placed in or adjacent to an exit in a manner to confuse the direction of exit.

R 408.10633 Permissible exits and exit components.

Rule 633. (1) Approved exits for all occupancies regulated by this part shall be restricted to the following permissible types: doors, inside or outside stairs, horizontal exits, ramps, escalators, and fire escapes for existing occupancies.

(2) An exit shall consist only of approved components. An exit shall be constructed as an integral part of the building or permanently affixed thereto.

(3) Stairs, landings, and other exit components shall be guarded against falls over open edges, and guards and handrails shall continue the full length of the guarded exit component.

(4) An exit protected by separation from other parts of the building shall have the separating construction meet the following:

(a) The separation shall have not less than a 1-hour fire-resistance rating when the exit connects 3 stories or less. This applies whether the stories connected are above or below the story at which the exit discharge is located.

(b) The separation shall have not less than a 2-hour fire-resistance rating when the exit connects 4 or more stories, whether above or below the floor of discharge.

~~(c) Any opening therein shall be protected by an approved~~ **An opening into an exit must be protected by a self-closing fire door that remains closed or automatically closes in an emergency upon the sounding of a fire alarm or employee alarm system.**

(d) An opening in an exit enclosure shall be confined to that which is necessary for access to the enclosure from a normally occupied space and for egress from the enclosure.

(5) Each exit route shall be a permanent part of the workplace.

(6) Each fire door, including its frame and hardware, shall be listed or approved by a nationally recognized testing laboratory. For the definition of a "nationally recognized testing laboratory, see 29 C.F.R. §1910.7 "Definition and requirements for a nationally recognized testing laboratory," as adopted in R 408.10606

R 408.10634 Number of exits.

Rule 634. (1) ~~An employer shall ensure that there are an adequate number of exit routes. Not less than 2 exits, remotely located from each other, shall be provided for every building, floor, or fire area, including a basement. However, a single exit may be permitted when approved in a new and existing low or ordinary hazard occupancy for a building, floor, or fire area with a population of less than 50 persons.~~

(2) Where the contents of a building are classified as high hazard, there shall be not less than 2 exits which are accessible in different directions. All doors shall swing in the direction of exit travel. Where floor areas are divided into rooms, there shall be not less than 2 ways of escape from every room, however small, except for toilet rooms that are not located in areas of high hazard classification.

~~(3) The exit routes shall be located as far away as practical from each other so that if 1 exit route is blocked by fire or smoke, employees can evacuate using the second exit route. A single story, noncombustible building for industrial or storage occupancy which has an approved fully equipped automatic sprinkler system and which is normally not subject to traffic by other than employees shall have exit doors which will provide safe egress and which are spaced not more than every 300 feet apart on the perimeter wall.~~

(4) At least 2 exit routes shall be available in a workplace to permit prompt evacuation of employees and other building occupants during an emergency, except as allowed in subrule (6) of this rule.

(5) More than 2 exit routes shall be available in a workplace if the number of employees, the size of the building, its occupancy, or the arrangement of the workplace is such that all employees would not be able to evacuate safely during an emergency.

(6) A single exit route is permitted where the number of employees, the size of the building, its occupancy, or the arrangement of the workplace is such that all employees would be able to evacuate safely during an emergency.

Note: For assistance in determining the number of exit routes necessary for your workplace, consult NFPA 101 "Life Safety Code," 2009 edition or "International Fire Code" 2009 edition, as adopted in R 408.10606.

R 408.10636 **Maximum travel distance to exits.** Table of exit distances.

Rule 636. (1) ~~An industrial or storage occupancy with an ordinary hazard classification may extend the maximum distance of travel to an exit to 400 feet if the occupancy is in a single-story, noncombustible building which has an approved, fully automatic sprinkler system which is in compliance with the provisions of R 408.10921 of general industry safety standard, Part 9. Fixed Fire Equipment.~~

(2) ~~An industrial or storage occupancy with an ordinary hazard classification may extend the maximum distance of travel to an exit to more than 400 feet if the occupancy is in a single-story, noncombustible building, has an approved, fully automatic sprinkler system, and the heights of the ceiling, smoke curtain, and roof ventilation are designed to minimize the possibility that an employee may be overtaken by the spread of fire or smoke within 6 feet of the floor level before he or she can reach an exit.~~

(3) ~~A building described in subrule (2) of this rule which has a travel distance of more than 400 feet shall have an approved fire alarm system installed in accordance with the provisions of R 408.10981 of general industry safety standard, Part 9. Fixed Fire Equipment, and shall have all of the following equipment:~~

(a) ~~A standard approved fire alarm that includes a coded system to a centrally located station, which station shall be supervised during occupancy.~~

(b) ~~A manually operated fire alarm sending station at each main exit and in the natural path of escape at an accessible and visible location.~~

(c) ~~A fire alarm sending station which is located so that not more than 200 feet will have to be traversed to reach the station.~~

(4) ~~A mercantile occupancy with an ordinary hazard classification may extend the maximum distance of travel to an exit to 300 feet if the occupancy is in a single-story, noncombustible building with an approved, fully automatic sprinkler system that is in compliance with the provisions of R 408.10921 of general industry safety standard, Part 9. Fixed Fire Equipment. A checkout area or lane not in use shall be equipped with a breakaway device to provide a means of egress in the event of emergency.~~

(5) Table 1 reads as follows:

TABLE 1			
Type of occupancy	Maximum travel distance to exits (in feet)		Dead-end limits (in feet)
	Unsprinklered	Sprinklered	
Mercantile, ordinary hazard	150 400	250 450	50
Mercantile, high hazard	75	75	0
Business	200	300	50
Industrial	200	250 300	50
Industrial, high hazard	0 75	75	0
Storage, low and ordinary hazard	200	400 300	100 50
Storage, high hazard	75	100	0
Hotels	100	200	50 35
Note: For miscellaneous structures, See R 408.10691 to R 408.10697			

R 408.10637 **Rescinded.** Means of egress capacity.

Rule 637. (1) ~~Where a building is equipped with exits so located as to satisfy travel distance requirements for the occupancy and hazard of contents classifications but has an exit deficiency due to its population density, additional exit capacity shall be provided to satisfy the requirements of these rules.~~

(2) ~~The capacity of a means of egress shall be measured in units of width of 22 inches. Fractions of a unit shall not be counted, except that 12 inches added to 1 or more full units shall be counted as 1/2 a unit of exit width. A 40-inch door may be rated as 2 units for existing construction only.~~

(3) ~~The capacity of a means of egress shall be limited to the capacity of its lowest rated component. Units of exit width shall be measured in the clear at the narrowest point of the means of egress.~~

R 408.10638 **Rescinded.** Capacity of components.

Rule 638. (1) Means of egress components shall have the following rated exiting capacities per unit of width:

- (a) Doors leading outside the building at grade or not more than 21 inches above or below grade..... 100 persons per unit
- (b) Horizontal exits 100 persons per unit
- (c) Stairs and ramps 60 persons per unit
- (d) Fire escapes with access by doors 45 persons per unit
- (e) Fire escapes with access by windows 20 persons per unit

(2) The exiting capacities prescribed in subrule (1)(a) and (b) may be increased to 150 persons per unit, if the occupancy is equipped with an approved fully automatic sprinkler system.

R 408.10639 Capacity as affected by population.

Rule 639. (1) The capacity of a means of egress from a building, floor, balcony, tier, or other occupied space shall be sufficient for the population thereof. The population for industrial and storage occupancies shall be based on the maximum number of employees or persons that may be in the space at any time as determined by actual count. All other types of occupancies shall be not less than the number computed in accordance with the provisions of table 2.

(2) Mercantile occupancy in a single-story, noncombustible building with an approved, fully equipped automatic sprinkler system that is in compliance with **General Industry Safety Standard Part 9 “Fixed Fire Equipment,” as referenced in R 408.10606**, the provisions of R 408.10921 of general industry safety standard, Part 9. Fixed Fire Equipment, may increase the square footage requirement in table 2 by 100%.

(3) The population of an occupancy shall be limited to the existing exit capacity of a building or space.

(4) Where an exit serves more than 1 floor, only the population of each floor considered individually need be used in computing the capacity of the exit at that level, if the exit capacity is not decreased in the direction of exit travel. Where a means of egress from floors above and below converge at an intermediate level, the capacity of the exit from the point of convergency shall be not less than the combined capacity of the converging exits.

(5) Table 2 reads as follows:

TABLE 2	
Type of occupancy	Square feet per person
Mercantile, street floor or sales basement	30
Mercantile, other floors	60
Mercantile, office	100
Mercantile, storage	300
Business	100
Hotel	200
Industrial	100 200
<p>Note: The computed population of an occupancy is obtained by dividing the total floor area of a building, floor, or fire area by the indicated square feet per person. Total floor area means the floor area within the perimeter of the outside walls of a building, with no deductions for any of the following:</p> <ul style="list-style-type: none"> (a) Hallways. (b) Stairs. (c) Closets. (d) Thickness of walls. (e) Columns. (f) Other features. 	

(6) The capacity of an exit route shall be adequate. Information regarding the "Occupant load" is located in NFPA 101 "Life Safety Code," 2009 edition and in the "International Fire Code" 2009 edition, as adopted in R 408.10606.

(7) Exit routes shall support the maximum permitted occupant load for each floor served.

(8) The capacity of an exit route shall not decrease in the direction of exit route travel to the exit discharge.

R 408.10641 Exit access and discharge.

Rule 641. (1) An exit access shall not be through a room subject to locking.

(2) An exit access shall be so arranged that it will not be necessary to travel through any area of high hazard occupancy in order to reach the nearest exit.

(3) The minimum width of an exit access shall be at least equal to the required width of the exit to which it leads, but not less than 34 inches. The headroom clearance shall be not less than 6 feet 8 inches from the floor.

(4) An exit discharge shall discharge directly **outside or** to a street, **walkway, refuge area, public way**, or to a yard, court or other open space **with access to the outside**. ~~of such size as to accommodate all employees leaving the building by that exit discharge to safe access to a street.~~

(5) Stairs and other exits shall be arranged to make clear the direction of egress to the street. Where an exit stairs continues beyond the floor of discharge, it shall be interrupted at the floor of discharge by a partition, door or other effective means.

(6) Exit access by the way of an exterior balcony, porch, gallery, or roof shall **be in compliance with all of the following**:

(a) Be kept free from accumulations of snow and ice.

(b) Be permanent direct route without obstructions, such as railings, gates, barriers, or other objects, that might divide the space into sections or rooms. Where furniture or other movable objects might block the path of travel, they shall be secured in place or a standard barrier as prescribed in **General Industry Safety Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," as referenced in R 408.10606**, ~~R 408.10231 of Part 2. Floor and Wall Openings, Stairways and Skylights,~~ shall protect the path of travel.

(c) Have no dead ends in excess of 20 feet.

(d) Comply with this part as to requirements for width and arrangement.

(7) **The street, walkway, refuge area, public way, or open space to which an exit discharge leads shall be large enough to accommodate the building occupants likely to use the exit route.**

(8) **An exit door shall be unlocked.**

(9) **An outdoor exit route is permitted.**

(10) **The outdoor exit route shall have all of the following:**

(a) **Guardrails to protect unenclosed sides if a fall hazard exists.**

(b) **Be covered if snow or ice is likely to accumulate along the route, unless the employer can demonstrate that any snow or ice accumulation will be removed before it presents a slipping hazard.**

(c) **Be reasonably straight and have smooth, solid, substantially level walkways.**

(d) **Not have a dead-end that is longer than 20 feet (6.2 m).**

(11) **An exit access shall be so arranged that employees will not have to travel toward a high hazard area, unless the path of travel is effectively shielded from the high hazard area by suitable partitions or other physical barriers.**

DOORS AND STAIRS

R 408.10643 Doors; general provisions.

Rule 643. (1) A door assembly, including the doorway, frame, door, and necessary hardware, may be used as a component in a means of egress when it conforms to the requirements of this part. As such, the assembly is designated as an exit door.

(2) A single leaf of an exit door shall be not less than 28 inches nor more than 48 inches in width.

(3) Where a door or gate opens directly on a stairway, a platform shall be provided, and the swing of the door or gate shall not reduce the floor area leading to the stairs to a width less than 20 inches.

~~(4) A sliding door shall not be used as part of the exit capacity of a building unless it is designed and equipped with a break-away type door.~~

R 408.10644 **Door swing. Swing.**

Rule 644. (1) **An A side-hinged** exit door shall be **used**. ~~of the side-hinged swinging type.~~

The force required to fully open any door in the means of egress shall not be more than **5 pounds** ~~50 pounds (222 newton)~~ applied to the latch side of the door. The door shall swing with exit travel when serving an area of high hazard occupancy or a building, floor, or area with a population of more than 50 **persons**. ~~persons, the construction of which started after the effective date of this part.~~

(2) If 1 or more approved exits are provided and the travel distance requires additional exits, a mechanically aided sliding door may be used to exit to the outside of a building constructed before May 15, 1970, under the following conditions:

- (a) The occupancy shall be classified as a low or ordinary storage hazard or an ordinary mercantile hazard.
- (b) The mechanical aid to the door shall allow the door to be opened quickly and easily by 1 person.
- (c) The mechanical aid of the door shall not be rendered inoperative by fire or the lack of maintenance.

(3) An exit door that gives access to a stairway shall swing in the direction of exit travel, shall not block stairs or landings during its swing, and shall not interfere with the full use of the stairway when open.

(4) An exit door at the foot of stairs from upper floors or at the head of stairs from basements shall swing with exit travel.

(5) A screen door or storm door that is part of a required exit shall not swing against the direction of exit travel in any case where doors are required to swing with exit travel.

(6) A side-hinged door shall be used to connect any room to an exit route.

(7) The door that connects any room to an exit route shall swing out in the direction of exit travel if the room is designed to be occupied by more than 50 people or if the room is a high hazard area; for example, it contains contents that are likely to burn with extreme rapidity or explode.

R 408.10645 Locks, fastening devices, and closing mechanism.

Rule 645. (1) **Employees shall be able to open an exit route door from the inside at all times without keys, tools, or special knowledge. A device such as a panic bar that locks only from the outside is permitted on exit discharge doors.** ~~In every building or structure, at all times the building or structure is occupied, an exit door shall be arranged and maintained so as to be readily opened without the use of a key from the side from which egress is to be made. Mental, penal, or corrective institutions which employ supervisory personnel who are on 24-hour daily duty and which have provided for the effective removal of occupants in case of fire or other emergencies are excepted from this requirement.~~

(2) A latch or other fastening device on an exit door shall be provided with a knob, handle, panic bar, or other simple type of releasing device. Slide bolts, hasps, hooks and eyes, and similar types of locking devices that are difficult to open against door pressure shall not be installed or used.

(3) A fire door to a stair enclosure or horizontal exit shall be provided with a reliable self-closing mechanism and shall not, at any time, be secured in the open position.

(4) An exit route door may be locked from the inside only in mental, penal, or correctional facilities and then only if supervisory personnel are continuously on duty and the employer has a plan to remove occupants from the facility during an emergency.

R 408.10647 Revolving doors.

Rule 647. (1) A revolving door shall be considered an approved exit door only if all of the following conditions are satisfied:

(a) The door shall be installed before the prohibition listed in subrule (2) of this rule.

(b) The number of revolving doors used as exit doors shall not be more than the number of swinging doors used as exit doors within 20 feet thereof.

(c) A revolving door without an adjacent swinging door may serve as an exit for a street floor elevator lobby if no stairway or door from other parts of the building discharges through the lobby and the lobby has no occupancy other than as a means of travel between elevators and the street.

(d) A revolving door shall be equipped with means to prevent its rotation at more than 12 1/2 revolutions per minute.

(e) A revolving door shall not be used at the foot of stairs from upper floors or at the head of stairs from the basement or other lower floors.

(f) A revolving door credited as an exit door shall have a rated capacity of 1/2 unit of exit width.

(2) A revolving door that is installed after **June 15, 1990**, ~~the effective date of this part~~ shall not be considered an approved exit door.

HORIZONTAL EXITS, RAMPS, AND ESCALATORS

R 408.10661 Horizontal exits.

Rule 661. (1) A fire area or area of refuge with a horizontal exit shall have, in addition to the horizontal exit or exits, at least 1 means of egress leading to the outside, or have access to an adjacent fire area containing an outside means of egress.

(2) Where either side of a horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked. ~~A fire area or area of refuge for which credit is allowed in connection with a horizontal exit shall have, in addition to the horizontal exit or exits, at least 1 means of egress leading to the outside.~~

(3) The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas allowing not less than 3 square feet clear floor area per person. ~~Where either side of a horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked.~~

(4) Where a horizontal exit serves areas on both sides of a wall, there shall be adjacent openings with swinging doors at each, opening in opposite directions, with signs on each side of the wall or partition indicating as the exit door which swings with the travel from that side; or other approved arrangements providing doors always swinging with any possible exit travel. ~~The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas allowing not less than 3 square feet clear floor area per person.~~

~~(5) Where a horizontal exit serves areas on both sides of a wall, there shall be adjacent openings with swinging doors at each, opening in opposite directions, with signs on each side of the wall or partition indicating as the exit door the door which swings with the travel from that side; or other approved arrangements providing doors always swinging with any possible exit travel.~~

R 408.10664 Ramps.

Rule 664. (1) A ramp may be a component in a means of egress when it conforms to the requirements of this part. A ramp which is constructed after ~~June 15, 1990, the effective date of this part~~ and which is less than the minimum measurements prescribed in this rule shall not be considered as an approved part of a means of egress.

(2) A ramp and the platforms and landings associated therewith shall be designed for not less than 100 pounds per square foot live load.

(3) The slope of a ramp shall not vary between landings. A landing shall be level and the changes in direction of travel, if any, shall be made only at landings.

(4) A ramp in a building that is more than 3 stories in height shall be made of noncombustible construction. A ramp floor and landings shall be solid and without perforations.

(5) A ramp shall have a nonslip surface.

(6) A ramp shall have a minimum width of 44 inches and a maximum slope of 1 inch in 12 inches.

FIRE ESCAPES

R 408.10671 Fire escape stairs.

Rule 671. (1) Fire escape stairs may be used as a required exit only in existing buildings. Fire escape stairs shall not constitute more than 50% of the required exit capacity. Fire escape stairs shall not constitute any part of the required exits for a new building.

(2) Fire escape stair dimensions shall be in accordance with table 4. 5:

TABLE 4 TABLE 5	
Minimum Width	22 inches clear between rails
Minimum horizontal dimension of a landing or platform	22 inches
Maximum rise	9 inches
Minimum tread, exclusive of nosing	9 inches
Spiral winders	Not permitted
Maximum height between landings	12 feet

(3) Fire escape stairs shall have walls or approved guards, and handrails on both sides.

R 408.10673 Exposure to fire escape stairs.

Rule 673. Fire escape stairs shall be so arranged that they will be subject to exposure by the smallest possible number of window and door openings. Every opening, any portion of which is within the following limits, shall be completely protected by approved fire doors or metal frame wired glass windows, as follows:

(a) A horizontal opening if within 15 feet of a balcony, platform or stairway constituting a part of the escape proper. This does not apply to a platform or walkway leading from the same floor to the escape proper. Protection need not extend around a right angle corner (outside angle 270 degrees) of the building.

(b) An opening below if within 3 stories or ~~36~~ 35 feet of a balcony, platform, walkway or stairway constituting a part of the escape proper, or within 2 stories or ~~24~~ 20 feet of a platform or walkway leading from any story to the escape proper.

(c) An opening above if within 10 feet of a balcony, platform or walkway, as measured vertically, or from any stair treads, as measured vertically from the face of the outside riser.

(d) An opening on a top story. Protection for wall openings is not required where stairs do not lead to the roof.

R 408.10675 Swinging stairs.

Rule 675. (1) A swinging stair section shall not be used for a fire escape stairs, except where termination is over a sidewalk, alley, or driveway.

(2) A swinging stair section shall not be located over doors, over the path of travel from another exit, nor be in any location where there are obstructions.

(3) The width of a swinging stair section shall be at least equal to that of the stairs above and the pitch shall not be steeper than that of the stairs above.

(4) A counterweight shall be provided for a swinging stair section and this shall be of the type balancing about a pivot, no cables being used. Counter-balancing shall be such that a weight of 150 pounds 1 step from pivot will not start swinging **section, action,** and a weight of 150 pounds, 1/4 of the length of the swinging stairs from the pivot, will positively cause the stairs to swing down.

(5) A latch or other device shall not be installed or used to lock a swinging stair section in the up position.

R 408.10677 Ladders.

Rule 677. No form of ladder shall be used as a fire escape except that a ladder conforming to **General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606,** ~~occupational safety commission standards, Part 3- Fixed Ladders, being R 408.10301 to R 408.10365 of the Michigan Administrative Code,~~ may be used to provide a means of escape from a boiler room, storage elevator, or tower, as permitted for special miscellaneous occupancies, elevated platforms around machinery, or similar spaces subject to routine simultaneous occupancy by not more than 3 persons.

ILLUMINATION AND MARKING

R 408.10680 Lighting.

Rule 680. (1) Lighting and marking shall be adequate and appropriate.

(2) Each exit route shall be adequately lighted so that an employee with normal vision can see along the exit route.

R 408.10685 Signs.

Rule 685. (1) A means of egress to an exit not immediately apparent from any point in an occupancy shall be marked by directional signs. **Additionally, the line-of-sight to an exit sign shall clearly be visible at all times.**

(2) A door, passage, or stairway, which is neither an exit nor an exit access, and which is so located or arranged as to be likely mistaken for an exit, shall be identified by a sign reading "NOT AN EXIT" or similar designation, or be identified by a sign indicating its actual use or character.

(3) A sign shall designate an exit and shall be located and be of such size and color and design as to be readily visible and identifiable from the distance of travel for that particular occupancy.

(4) Each exit must be clearly visible and marked by a sign reading "EXIT."

R 408.10686 Sign illumination and letter size.

Rule 686. (1) An exit sign shall be illuminated **to a surface value of at least 5 foot-candles (54 lux) by a reliable light source and be distinctive in color. Self-luminous or electroluminescent signs that have a minimum luminance surface value of at least .06 foot lamberts (0.21 cd/m²) are permitted.** ~~by a light source giving a value of not less than 5.0 footcandles on the illuminated surface.~~

(2) An exit sign shall have the word "EXIT" in plainly legible letters not less than 6 inches **(15.2 cm)** high, with the principal strokes of the letters **in the word "EXIT"** not less than 3/4 ~~inch~~ **of an inch (1.9 cm)** wide.

(3) An internally illuminated exit sign shall be provided where the reduction of normal illumination is permitted and less than 5 footcandles would appear on the exit sign.

R 408.10695 Storage elevators for combustible commodities.

Rule 695. (1) In a storage elevator for combustible commodities there shall be at least 1 stairway from the basement to the first floor and from the first floor to the top floor of the working house which is enclosed in a dust-tight, noncombustible shaft.

(2) A noncombustible door of the self-closing type shall be provided at each floor landing.

(3) An exterior stair or basket ladder-type fire escape, as prescribed in **General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606,** ~~the provisions of general industry safety standard, Part 3- Fixed Ladders, being R 408.10301 et seq. of the Michigan Administrative Code,~~ shall be provided from the roof of the working house to ground level or to the roof of an adjoining annex with access from all floors above the first.

(4) An exterior stair or basket ladder-type fire escape, as prescribed in **General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606,** ~~the provisions of general industry safety standard, Part 3- Fixed Ladders, being R 408.10301 et seq. of the Michigan Administrative Code,~~ shall be provided from the roof of each storage annex to ground level.

(5) A fire escape ladder shall be provided adjacent to a manlift for the up and down sides.

(6) A storage elevator shall have an opening that leads to a fire escape ladder from each floor or work level.

(7) Storage elevators for combustible commodities that exist before April 30, 1974, do not need to comply with the provisions of subrules (1) and (2) of this rule.

R 408.10696 Towers.

Rule 696. (1) A tower occupied for purposes such as observation or signaling, either an independent structure or on top of a building, shall be permitted with a single stairway or ramp exit if all of the following conditions are met:

(a) The tower is of such size as not to be subject to occupancy by more than 25 persons on any 1 floor level.

(b) The tower is subject only to occupancy by persons capable of descending the stairway and is not used for living or sleeping purposes.

(c) The construction is fire-resistive, noncombustible, or heavy timber, with no quick-burning interior finish. There shall be no combustible materials in, under, or in the immediate vicinity of the tower, except as necessary to perform the requirements of occupancy.

(2) Stairs shall conform to the requirements of this part, except that for existing towers fire escape type stairs may be used. ~~(See **General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606.** occupational safety standards commission standards, Part 3. Fixed Ladders, being R 408.10301 et seq. of the Michigan Administrative Code.)~~

(3) A tower, such as a forest fire observation tower and a railroad signal tower designed for occupancy by not more than 3 persons employed therein, need not be constructed of fire-resistive, noncombustible material and may be served by ladders instead of stairs. ~~(See **General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606.** occupational safety standards commission standards, Part 3. Fixed Ladders, being R 408.10301 et seq. of the Michigan Administrative Code.)~~